



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/806,643

03/23/2004

Jeffrey J. Schroeder

35691US1

2569

116 7590 05/11/2007

PEARNE & GORDON LLP

1801 EAST 9TH STREET

SUITE 1200

CLEVELAND, OH 44114-3108

EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1771

MAIL DATE

DELIVERY MODE

05/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/806,643	SCHROEDER ET AL.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 3, 5, 7, 10-12, 15-23, 33, 35, 39-42, 44, 45 and 47-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 3, 5, 7, 10-12, 15-23, 33, 35, 39-42, 44, 45, and 47-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The 112 claim rejections and the art rejections are maintained.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2, 3, 5, 7, 10-12, 15-23, 33, 35, 39-42, 44, 45, and 47-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejections have been maintained for the following reasons. Claim 47 contains an improper hybrid combination. The preamble "an automotive body panel" is not consistent with the body of the claim which includes a combination of a heat shield and an automotive body panel.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 7, 10-12, 33, 35, 39, 42, 45 and 47-49 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Zwick (US 6,302,466). Zwick discloses a heat shielding vehicle trim comprising a heat shield 9 clamped to a car body 2 as shown in figure 1. The heat shield includes an insulating material 5 interposed between two aluminum layers 1 and 6 (figure 1, column 4, lines 10-20). The insulating material can be of a foam or a nonwoven material (column 3, lines 45-50). The metal layer and the foam having the thickness within the claimed ranges (column 4, lines 10-12). Zwick discloses the resilient insulating layer having a superior vibration-damping and heat resistance effects. Therefore, it is the examiner's position that the foam layer would inherently have the heat shield and acoustic damping within the claimed ranges so as to effectively serve the same purposes. There is no suggestion that the insulating layer bonded to the metal layer via an adhesive layer. Accordingly, Zwick anticipates or strongly suggests the claimed subject matter.
7. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zwick (US 6,302,466) as applied to claim 47 above, and further in view of Hasegawa et al (US 4,923,904). Zwick does not specifically disclose the foam layer being made from an expandable foaming composition as recited in the claims. Hasegawa, however, discloses a polyurethane foam suitable as a heat insulating material made from a composition similar to the composition as set forth in the claims. Hasegawa discloses the foam easily being cut to form a shape when used and fitted to a

complex shape (column 3, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polyurethane foam as described in the Hasegawa invention because the foam layer has excellent foaming performance and can be produced from less expensive raw materials and fitted to a complex shape.

8. The art rejections based on Zwick have been maintained for the following reasons.

Applicants argue that Zwick does not teach a heat shield comprising two metallic layers. The examiner respectfully disagrees. The examiner directs Applicants' attention to figure 1, column 3, lines 45-50 and column 4, lines 10-20. The heat shield includes an insulating material 5 interposed between two aluminum layers 1 and 6 wherein the insulating material is of a foam or a nonwoven material.

Accordingly, Zwick anticipates the claimed subject matter.

9. Claims 2, 3, 5, 7, 10-12, 19, 20, 33, 35, 39-42, 44, and 47-49 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ragland et al (WO 90/14944). Ragland teaches a heat shield laminate comprising a first metallic layer, a first insulating material, a second metallic layer and a second insulating material. The first and second insulating materials can be either a polyurethane foam or a non-woven layer (claims 19 and 20). The heat shield laminate is mounted on the metal floor of the passenger compartment (page 7, lines 10-20), which reads on Applicants' automotive body panel. The metal layer has a thickness of from 0.001 to 0.0015 inches (page 10, lines 15-20). The first insulating layer has a thickness up to 0.1 in. and the second insulating layer having a

thickness up to 1 in. (claim 5). The laminate has surprisingly effective acoustical properties (page 8, lines 5-10). The insulation layer is a polyester non-woven batt (page 10, lines 25-28). Ragland does not specifically disclose the foam layer being deformable to accommodate to accommodate a particular shape and contour to which the heat shield laminate is to bent and to generally conform in use without substantially damaging the cellular structure of the foam as a result of such deformation. However, it appears that the heat shield laminate meets all the structural limitations as set out in the claims. The foam layer is disposed between the two metallic layers. The foam layer has a thickness within the claimed range. The heat shield laminate is mounted to an automotive body panel. The laminate can be cut to form the various shapes desired for heat and/or sound barrier for particular end use applications (page 16, lines 1-3). The final laminate is rolled on roll (page 15, lines 20-25). Therefore, it is not seen that the foam could not have been deformable to accommodate to accommodate a particular shape and contour to which the heat shield laminate is to bent and to generally conform in use without substantially damaging the cellular structure of the foam as the laminates of Ragland and the present invention are directed to similar products which serve the same purposes, namely heat shielding automotive body panel. The same token is applied to the thermal resistance and sound absorbency of the foam. Accordingly, Ragland anticipates or strongly suggests the claimed subject matter.

10. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ragland et al (WO 90/14944) as applied to claim 47 above, and further in view of

Hasegawa et al (US 4,923,904). Ragland does not specifically disclose the foam layer being made from an expandable foaming composition as recited in the claims. Hasegawa, however, discloses a polyurethane foam suitable as a heat insulating material made from a composition similar to the composition as set forth in the claims. Hasegawa discloses the foam easily being cut to form a shape when used and fitted to a complex shape (column 3, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polyurethane foam as described in the Hasegawa invention because the foam layer has excellent foaming performance and can be produced from less expensive raw materials and fitted to a complex shape.

11. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ragland et al (WO 90/14944) as applied to claim 47 above, and further in view of Poole et al (US 6,955,845). Ragland does not specifically disclose a fiber mat embedded within the insulating layer. Poole, however, discloses an acoustical and thermal insulator comprising a blanket layer interposed between two facing layers and the porous insert embedded within the blanket layer (figure 2). Poole discloses the insert made from a polymer based blanket product which includes a polyester fiber mat (column 4, lines 63-65, column 5, lines 10-12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed the fiber mat within the insulating material of Ragland motivated by the desire to provide better heat shield and sound damping effects (column 5, lines 5-20).

Poole does not specifically disclose the fiber mat insert spaced substantially equidistant from the first and second facing layers and having a thickness of about 2 to 2.5 mm. However, Poole discloses that to reduce the thickness of the insulator, increase its flexibility for ease of installation and lower the production cost, the insert is sized and positioned in the insulator at the specific locations to allow the best thermal shielding of the heat source and/or to provide excellent sound damping from the sources of strong sounds. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed the fiber mat within the insulating material in a manner as set out in the claims motivated by the desire to allow the best thermal shielding of the heat source and/or to provide excellent sound damping from the sources of strong sounds. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

12. The art rejections based on Ragland have been maintained for the following reasons. Applicants argue that Ragland does not teach the deformability characteristics associated with the heat shield as set forth in the claims. The arguments appear to be inaccurate. The heat shield laminate of Ragland meets all the structural limitations as set out in the claims. The foam layer is disposed between the two metallic layers. The foam layer has a thickness within the claimed range. The heat shield laminate is mounted to an automotive body panel. The laminate can be cut to form the various shapes desired for heat and/or sound barrier for particular end use applications (page 16, lines 1-3). ***The final laminate is rolled***

on roll (page 15, lines 20-25). Therefore, it is not seen that the foam could not have been deformable to accommodate to accommodate a particular shape and contour to which the heat shield laminate is to bent and to generally conform in use without substantially damaging the cellular structure of the foam as the laminates of Ragland and the present invention are directed to similar products which serve the same purposes, namely heat shielding automotive body panel.

13. Claims 2, 3, 5, 7, 10-12, 15-20, 33, 35, 39-42, 44, and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poole et al (US 6,955,845) in view of Ragland et al (WO 90/14944). Poole discloses an acoustical and thermal insulator comprising a blanket layer interposed between two facing layers and the porous insert embedded within the blanket layer (figure 2). The first and second facing layer can be made from metal foil (column 4, lines 15-20; and column 5, lines 45-47). The first facing layer has a thickness of 1 mil within the claimed range. Poole discloses the insert made from a polymer based blanket product which includes a polyester fiber mat (column 4, lines 63-65, column 5, lines 10-12). The insulator is mounted on a vehicle body panel (column 5, lines 40-45). The insulator is light weight, easily manipulated with bending or folding into a mounting position (column 6, lines 60-65). Poole does not specifically disclose the polymer based blanket layer being a foam layer. Ragland, however, teaches a heat shield laminate comprising a first metallic layer, a first insulating material, a second metallic layer and a second insulating material. The first and second insulating materials can be either a polyurethane foam or a non-woven layer (claims 19 and 20). The heat shield laminate is mounted

on the metal floor of the passenger compartment (page 7, lines 10-20), which reads on Applicants' automotive body panel. The metal layer has a thickness of 0.001 to 0.0015 inches (page 10, lines 15-20). The first insulating layer has a thickness up to 0.1 in. and the second insulating layer having a thickness up to 1 in. (claim 5). The laminate has surprisingly effective acoustical properties (page 8, lines 5-10). The insulation layer is a polyester non-woven batt (page 10, lines 25-28). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add an additional insulating layer to a metal foil layer opposite from the blanket layer motivated by the desire to obtain the insulator with high heat conductivity, thereby providing excellent thermal protection in "spot" insulation applications (see Ragland, page 6, lines 5-15).

Poole does not specifically disclose the fiber mat insert spaced substantially equidistant from the first and second facing layers and having a thickness of about 2 to 2.5 mm. However, Poole discloses that to reduce the thickness of the insulator, increase its flexibility for ease of installation and lower the production cost, the insert is sized and positioned in the insulator at the specific locations to allow the best thermal shielding of the heat source and/or to provide excellent sound damping from the sources of strong sounds. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed the fiber mat within the insulating material in a manner as set out in the claims motivated by the desire to allow the best thermal shielding of the heat source and/or to provide excellent sound damping from the sources of strong sounds. This is in line with *In re*

Aller, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Poole as modified by Ragland discloses the insulating layer having excellent vibration-damping and heat shielding effects. Therefore, it is the examiner's position that the foam layer would inherently have the heat shield and acoustic damping within the claimed ranges so as to effectively serve the same purposes.

14. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poole et al (US 6,955,845) in view of Ragland et al (WO 90/14944) as applied to claim 47 above, and further in view of Hasegawa et al (US 4,923,904). Neither Poole and Ragland teaches or discloses the foam layer being made from an expandable foaming composition as recited in the claims. Hasegawa, however, discloses a polyurethane foam suitable as a heat insulating material made from a composition similar to the composition as set forth in the claims. Hasegawa discloses the foam easily being cut to form a shape when used and fitted to a complex shape (column 3, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polyurethane foam as described in the Hasegawa invention because the foam layer has excellent foaming performance and can be produced from less expensive raw materials and fitted to a complex shape.
15. The art rejections over Poole in view of Ragland have been maintained for the following reasons. Applicants argue that one skilled in the art would not be motivated to substitute the foam of Ragland for the fibers of Poole because nowhere

does Ragland teach or suggest the foam having the same deformability as the fibers. That is not true. Turning to the Ragland reference, Ragland teaches a heat shield laminate comprising a first metallic layer, a first insulating material, a second metallic layer and a second insulating material. The first and second insulating materials can be either a polyurethane foam or a non-woven layer (claims 19 and 20). The foam layer has a thickness within the claimed range. The heat shield laminate is mounted to an automotive body panel. The laminate can be cut to form the various shapes desired for heat and/or sound barrier for particular end use applications (page 16, lines 1-3). ***The final laminate is rolled on roll*** (page 15, lines 20-25). Likewise, the foam must be deformable so as to be rolled on roll. Accordingly, the art rejections are sustained.

Conclusion

16. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory

period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

Hai Vo

**HAIVO
PRIMARY EXAMINER**